

Preliminary Amendment  
Serial No.: 10/807,048

**IN THE DRAWINGS**

Please replace Figure 8 and 10 with the replacement sheets Figure 8 and 10:

**REMARKS**

By this Office Action, the Examiner has required restriction to one of the following inventions under 35 U.S.C. '121:

- |    |          |                                      |
|----|----------|--------------------------------------|
| A. | Group I  | The species as set forth in Figure 7 |
| B. | Group II | The species as set forth in Figure 9 |

In response to the Requirement for Restriction, applicants hereby **provisionally** elects to prosecute **with traverse** Group II, the Species as set forth in Figure 9 and claims 1-12 and 16-20.

Under the Patent Office Examining Procedures, "[i]f the Search and Examination of an entire Application **can be made without serious burden, the Examiner *MUST* examine it on the merits**, even though it includes claims to distinct or independent inventions" (MPEP 803).

The Applicant respectfully submits that **the Office Action appears to have completed the Search and appears to have started the Examination of the present Application**, as indicated at the Notice of References Cited, the objections and rejections made to the present claims, and page 5-6 (disclosing that the references resulted from the Search contains some of the features disclosed in the present specification). As such, the Applicant believes that the Search and Examination of an entire Application **can be made without serious burden to the Examiner**, and the Applicant respectfully requests withdrawal of the Restriction Requirement.

Figures 8 and 10 stand objected for including informalities. In response, the Applicant submits that Replacement sheets Figures 8 and 10 including the corrections.

The Drawings stand objected under 37 C.F.R. 1.83(a) for allegedly failing to include an illustration of m stages of XOR gates, as recited in claim 18. Applicant respectfully submits that

claim 18 is fully supported by the judgment unit 910 illustrated in Figure 9. As such, the Applicant respectfully requests withdrawal of the objection.

The specification stand objected for allegedly including informalities noted in the following items:

- (1) The Disclosure Description does not support claim 18.
- (2) Page 1, line 5: The letters are spaced unevenly.
- (3) Page 1, line 14: The terms "a parallel" is recited instead of the term "parallel."
- (4) Page 2, line 1: The letters are spaced unevenly.
- (5) Page 2, line 4: The terms "8 terabits" is recited instead of the terms "10 terabits."
- (6) Page 3, line 7: The term "carrier" is recited instead of the term "carrier wave."
- (7) Page 3, line 22: The term "carrier" is recited instead of the term "carrier wave."
- (8) Page 4, line 2: The terms "2-level" is recited instead of the terms "3-level."
- (9) Page 4, line 22: The term "inparallel" is recited instead of the terms "in parallel."
- (10) Page 5, line 3: The term "present" is recited instead of the terms "present invention."
- (11) Page 5, line 4: The term "exist" is recited instead of the term "exists."
- (12) Page 5, line 11: The term "present" is recited instead of the terms "present invention."
- (13) Page 6, line 8: The terms "a parallel" is recited instead of the term "parallel."
- (14) Page 6, line 11: The terms "a parallel" is recited instead of the term "parallel."
- (15) Page 7, line 18: The terms "logic al operation" is recited instead of the terms "logical operation."
- (16) Page 7, line 20: The letters are spaced unevenly.
- (17) Page 8, line 7: The letters are spaced unevenly.
- (18) Page 8, line 12: The terms "number of 'n' of the input" is recited instead of the terms "number of 'N' of the input."
- (19) Page 8, line 21: The terms "a parallel" is recited instead of the term "parallel."
- (20) Page 9, line 2: The letters are spaced unevenly.
- (21) Page 9, line 15: The term "signal" is recited instead of the term "signals"

(22) Page 10, line 2: The terms “inputted signal” is recited instead of the terms “signal output by the AND gate.”

(23) Page 10, line 3: The terms “inputted signal” is recited instead of the terms “AND output.”

In response, the Applicant has made the corrections to the informalities noted in the items 2-4, 6, 7, and 8-23.

The Applicant respectfully submits that the alleged informalities noted in items 1, 5, and 8, however, are not informalities. In particular, claim 18, as noted above, is fully supported by the judgment unit of precoder illustrated in Figure 9, contrary to the indication by item 1.

In addition, the specification explicitly indicates that “various research efforts are being actively conducted to develop a system which can transmit more than two hundred 40-gigabits-per-second (Gbps) channels through a single optical fiber simultaneously” (see page 2, line 1-4). Further, the Applicant respectfully submits that a Mach-Zehnder interferometer is capable of outputting 2-level optical duo-binary signal after amplifying 3-level duo-binary signal. Therefore, the Applicant respectfully submits that the alleged informalities noted in the items 1, 5, and 8 are not informalities, and amendments to the specification are not necessary.

In view of the changes and the Applicant’s remark, the Applicant respectfully requests withdrawal of the objection on the present specification.

Claims 1, 15, 17, and 20 stand objected for allegedly containing typographical errors. In response, the Applicant has made appropriate correction to claims 1, 17, and 20. The Applicant respectfully submits that claim 15 has been withdrawn from consideration; the objection on claim 15 is no longer relevant.

Claims 5, 6, 11, and 12 stand objected under 37 C.F.R. for alleged being duplicates of claims 3, 4, 9, and 10, respectively.

The Applicant respectfully submits that claims 3 and 9 recite “N-1 XOR gates configured to perform XOR operations sequentially,” whereas claims 5 and 11 recite “N-1 XOR gates configured to perform XOR operations.” As such, claims 5 and 11 are not duplicates of claims 3 and 9, respectively. Moreover, claims 6 and 12 depending on claims 5 and 11, respectively, are not duplicates of claims 4 and 10, respectively. The Applicant respectfully requests withdrawal of the objection.


Claim 13 stands rejected under 35 U.S.C. 101, as allegedly failing to comply with the statutory requirement. The Applicant respectfully submits that claim 13 has been withdrawn and the rejection is not relevant at this time; the Applicant will address the issue when the patentability of claim 13 under 35 U.S.C. 101 becomes relevant. As such, the Applicant respectfully requests withdrawal of the rejection at this time.

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Should the Examiner deem that there are any issues which may be best resolved by telephone, please contact Applicant's undersigned representative at the number listed below.

Respectfully submitted,

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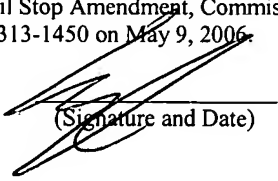
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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Mail Stop Amendment, Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on May 9, 2006.

Steve Cha, Reg. No. 44,069  
(Name of Registered Rep.)

  
(Signature and Date)